

Remarks

With this Amendment, Claims 1 and 21 are being currently amended and new Claim 22 is being added. Claim 6 has been previously canceled. Thus, upon entry of this Amendment, Claims 1-5 and 7-22 are pending and under consideration.

Claim 1 is amended to better recite the present invention. In particular, Claim 1 is amended to recite that when a voltage is applied to the liquid crystal layer, the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction. Support for this amendment can be found throughout the original disclosure and in particular in FIG. 1A and the Specification at page 8, line 17 onwards. Thus, no new matter is introduced by the amendments to Claim 1.

Claim 21 is amended to correct typographical errors, replacing "combing" with "combining."

New Claim 22 is added to recite further limitations of Claim 1, in particular, the off-normal viewing direction is in the range of 15° to 35° in azimuth angle, and in this range, the maximum contrast ratio is not lower than 40. Support for new Claim 22 can be found in the Specification at page 17.

Claims 1-2, 8-9 and 14 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Paukshto *et al.* in view of Ignatov *et al.* The Examiner argues that the alignment, material and thickness of the liquid crystal layer are such that at the mid-point of the rotation twist, the direction of liquid crystal directors inherently coincides with an off-normal viewing direction of the liquid crystal display. Applicants respectfully disagree.

In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teaching of the applied prior art. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. *In re Robertson*, 169 F.2d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). Applicants respectfully submit the Examiner has not met the burden to show that the limitation recited in Claim 1 is an inherent characteristic that necessarily flows from Paukshto *et al.* or Ignatov *et al.*

Claim 1 recites that the alignment, material and thickness of the liquid crystal layer are such that when a voltage is applied to the liquid crystal layer, the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction. A liquid crystal display, arguendo, "necessarily" has a maximum contrast ratio in a viewing angle. By no means, however, does the maximum contrast necessarily coincide with an off-normal viewing direction of the liquid crystal display. Nor is it necessary that the direction of liquid crystal directors coincide with an off-normal view direction of the liquid crystal display. It is typical, as is in conventional liquid crystal displays, that a contrast maximum is achieved in the normal viewing direction, *i.e.*, the direction normal to the display screen. As the courts have long held, inherency may not be established by probabilities or possibilities. To establish inherency, the Examiner must provide clear evidence that the missing descriptive matter, here the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction, is necessarily present in the teaching of Paukshto *et al.* and Ignatov *et al.* The Examiner has not met the burden to prove so.

In the invention recited in instant Claim 1, the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction when a voltage is applied to the liquid crystal display. According to the present invention, the center of the viewing cone, at which the maximum image contrast is obtained, coincides with a certain direction that is off the normal to the display screen. In contrast, in conventional liquid crystal displays, a maximum contrast ratio is achieved in the normal viewing direction. Neither Paukshto *et al.* nor Ignatov *et al.* teach or suggest the limitation that the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction when a voltage is applied to the liquid crystal display.

Accordingly, Applicants respectfully submit that a prima facie obviousness has not been established and reconsideration of the rejection of Claim 1 under 35 U.S.C. 103(a) over Paukshto *et al.* and Ignatov *et al.* is respectfully requested.

Applicants have studied other references cited by the Examiner, including U.S. patent application publication Nos. 2002/0089621 ("Suzuki"), 2002/0192397 (Tsujiimoto"), 2005/0151905, 2002/0145689 ("Kaneko"), 2005/0151905 (Kurtz"), and Lazarev *et al.* "E-type


Polarizers and Retarders.” None of the cited references teach or reasonably suggest the limitation that the direction of liquid crystal directors coincide with an off-normal viewing direction of the liquid crystal display at the mid-point of the rotational twist and a maximum image contrast is achieved in the off-normal viewing direction when a voltage is applied to the liquid crystal display. Therefore, the cited references do not compensate the deficiency of Paukshto *et al.* and Ignatov *et al.*

Claims 2-5 and 7-22 depend on Claim 1. They are therefore allowable for at least the same reasons as for Claim 1.

Conclusion

In view of the foregoing, Applicants respectfully submit that this application is now in condition for allowance. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned attorney at the telephone number listed below. No fees beyond those being submitted concurrently herewith are believed due. However, the commissioner is authorized to charge any additional required fees, or credit any overpayment, to Dorsey & Whitney LLP Deposit Account No. 50-2319 (Order No. A-72195/MSS/TJH (477077-102)).

Respectfully submitted,


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